



Naval forces in
Arabian Gulf.

U.S. Navy

with Naval Forces

By ROGER W. BARNETT

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To achieve U.S. security objectives it is necessary to anticipate the environment in which future military operations may be conducted. Projections about the politico-military scene in 2010 influence current defense policies, from force structure to contingency planning. National security requires that both planners and programmers get it right, for the stakes are high. A systematic way is needed to anticipate:

- what the Armed Forces will be called upon to do
- where, when, and against whom they will operate
- what joint and multinational forces will be available
- how to employ forces in the optimum manner
- what risks must be run under various employment schemes.

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This article focuses on how naval combat forces should be employed in 2010. Narrowing that focus presumes the Nation will want to maintain capable forces to underwrite its security and that of its allies and friends around the globe. It also accepts that use of force will be circumscribed by a variety of organizational, operational, legal, and moral constraints. Moreover, it emphasizes naval combat operations, not humanitarian operations or presence.

Joint Vision 2010 provides an operational structure for operations in the early 21st century through four operational concepts: dominant maneuver, precision engagement, full dimensional protection, and focused logistics. These concepts are part and parcel of *Naval Operational Concept* and *Operational Maneuver from the Sea* issued by the Navy and Marine Corps, respectively. For analytical purposes they can be applied within the context of the accompanying illustration as a

means of grasping 2010 with naval forces. While the concepts describe the environment of the future in terms of critical tasks being faced by naval forces, operations cannot be factored into its constituent parts because of inevitable overlap and duplication.

Dominant Maneuver

Maneuver is accomplished relative to something else. In operational art, maneuver helps to gain positional advantage over enemies. Importantly for force planning and military operations, all our enemies will be located overseas as they have been throughout this century. Force movement, maneuver, and sustainment over long distances will remain hallmarks of the Armed Forces. Thus the success of overseas movement will be a function of protecting both lines of movement and communications.

Being relational, successful maneuver will rely on the ability to identify, locate, and track strategic and operational targets. For centuries a

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defining characteristic of warfare at sea, selecting, finding, and tracking the right target continues to be the most difficult and important action in the realm of naval warfare. This will

require on-scene forces in addition to space-based sensors in the time frame under consideration. To find and track the right target, commanders must be capable of staring, not merely looking. Manned and unmanned airborne platforms perform this function in the most effective way.

Once a target has been identified, operational maneuver can take place with respect to it, to operational depths, for either offensive or defensive purposes. Once a target has been located and tracked, a commander can optimize the effectiveness of maneuver. Being relational, maneuver also includes actions to contain or constrain enemy movements or mobility.

Maneuver constitutes an integral part of a commander's plan, and actions will be organized, integrated, and coordinated to facilitate it. Both operational security and deception will heighten its impact, for they offset enemy efforts to neutralize or negate it.

An enemy's capabilities to reduce the effects and value of operational maneuver in the future will depend on its intelligence, surveillance, and reconnaissance (ISR) and command and control (C²), and whether it has forces agile enough to offset its adversary's ability to maneuver. An enemy will likely control interior operational lines while we operate on exterior lines.

In the final analysis, operational maneuver enables operations in depth to achieve strategic or operational objectives. Tasks within this operational list might include:

- shows of force
- demonstrations
- forcible entry through airborne, amphibious, and air assault
- reinforcing and expanding lodgments
- raids
- penetrations, direct assault, and turning movements
- direct actions
- unconventional warfare
- taking the battle to an enemy, countering its initiative, defeating its attack, and conducting retrograde operations
- overcoming operationally significant barriers, obstacles, and mines
- operational countermobility through employment of an operational system of obstacles, carrying out sanctions, embargoes, or blockades, and undertaking maritime interception.

Operational maneuver also includes actions taken to control operationally significant land areas, gain and maintain air and maritime superiority, isolate the theater of operations, or provide assistance to friendly nations in resource and population control.

Potential enemies may seek to prevent friendly forces from achieving dominant maneuver, which implies that the success of the above tasks will be highly situation-dependent. Recognizing that strategic and operational objectives will probably be located ashore, which tasks can be achieved in pursuit of the objectives will depend not only on an enemy, location, and time, but on the ability to enable and facilitate tasks through operational maneuver. Maneuver also increases the effectiveness of precision engagement, full dimensional protection, and focused logistics.

Precision Engagement

The delivery of ordnance on target has evolved to the point where *brilliant* munitions can achieve virtual pinpoint accuracies. Whereas in 1943 it took 1,500 B-17 sorties dropping six one-ton bombs each to destroy a 60 by 100 foot target with 90 percent probability of a kill, by 1970 it required 176 F-4 sorties in the Vietnam War. Today, it takes one laser-guided bomb delivered by one strike aircraft (10 foot circular error probable). By 2010 this will not change much simply because significantly greater accuracy will not be needed—the problem will become one of locating and identifying targets.

Precision engagement includes bombs, rockets, missiles, artillery, and nonlethal means that are delivered to operational depths. It also encompasses placement of troops ashore. As described

above, order of magnitude increases in accuracy have reduced the need for weight of ordnance on target and the explosive power of individual weaponry. Greater accuracy means fewer weapons with smaller warheads to accomplish the same effects with much less collateral damage.

In the future precision engagement will become first an exercise in targeting and then in allocating targets to the most appropriate weapon system. Targeting involves identifying, locating, classifying, tracking, and prioritizing targets. Operational targets are those that will have a decisive effect on campaigns and major operations. Precision engagement will most likely be a joint and multinational undertaking.

Precision engagement can be employed for offensive counterair, suppression of enemy air defenses, and interdiction of air, surface, and subsurface operational targets. Special operations forces can be deployed as part of precision engagement for many of the same purposes as attacks by air or non-air breathing weapons. They are especially useful for negating or neutralizing enemy weapons of mass destruction.

Other operational concepts are also supported by precision engagement. It can facilitate dominant maneuver, underwrite full dimensional protection, and provide cover for focused logistics. It can also disrupt enemy command and control networks or even put them entirely out of commission.

The speed with which attacks can be delivered on the right target will have greater import as 2010 approaches. This is because of the difficulty in target location and identification and enemy interest in countertargeting. Few key targets will be stationery even on the strategic and operational levels, and deception will be a major

nonlethal fires can take the form of electronic and information attack

part of countertargeting plans. The time from location and identification of a target to weapon arrival will become more significant for success. This means weapon systems will need great responsiveness and flexibility and that weapon flight time must be minimized. Proximity of launchers to a target, the line of acceptable risk, and high flight speeds will help to compress the sensor-to-shooter-to-target sequence. The full sequence—including the shooter-to-target segment—must be included.

Damage and munitions effects assessments have always been part of targeting and will be no less crucial in the future. Four related factors are exercising a growing influence on precision engagement: friendly casualties, fratricide, collateral damage, and unintended consequences.

The threshold for accepting casualties has unquestionably dropped since World War II, but

how far is debatable. The effect on precision engagement is that risk of own-force casualties must be factored in with greater care.

As the speed with which war is conducted on the tactical, operational, and strategic levels has increased—thus shortening decision time—the danger of blue-on-blue engagement has grown. Weapons lethality, moreover, adds another sort of risk. The premium on fast decision-making and trigger-pulling together with accurate weapons increases the chance of fratricide. Improvements in determining locations brought about by the global positioning system and advances in identification technologies will help, but the sensitivity will remain.

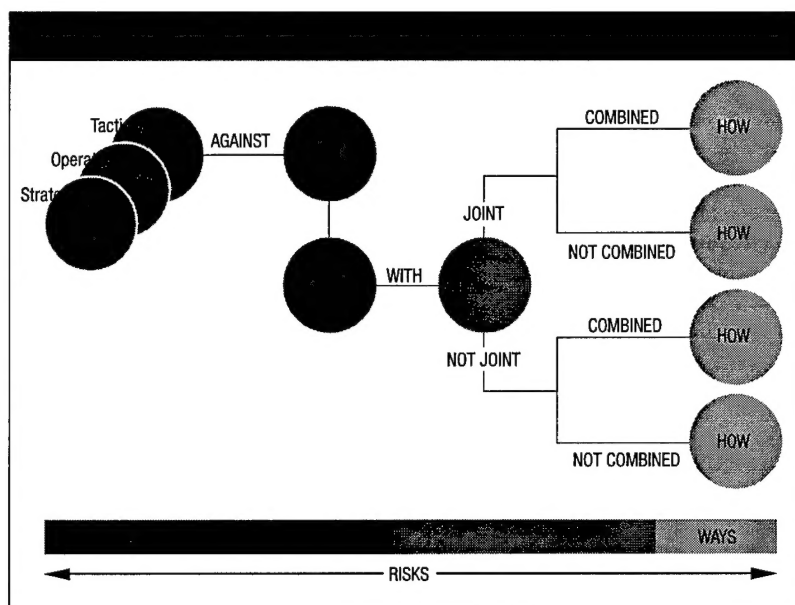
Collateral damage has been ameliorated by precise weapons with smaller explosive yields. Nevertheless, the advent of precision has increased the demand for greater accuracy which again underscores the necessity of selecting and identifying the right target.

The last factor, unintended consequences, has a further depressing influence on precision engagement. The possibility of unintended consequences arises when force is used. Yet problems multiply when potential unintended consequences with low risks begin to have a serious impact on targeting. One case was the nuclear winter debate of the 1980s, but the question appears in much less catastrophic situations when the use of force is considered. Potential environment damage and anticipated costs of reconstructing what may be damaged fall in this category.

Considerations of collateral damage and the like have increased interest in nonlethal or less-than-lethal precision engagement. Nonlethal fires can take the form of psychological operations, electronic and information attack, and nonlethal munitions. Their object is the same as lethal fires, but their application and utility are more restricted. The difficulty of damage assessment and lack of confidence in its effectiveness may well require that their targets also be attacked by lethal fires.

Sensors for damage and munition effect are becoming more discerning but remain quite complex and difficult. Imperfect as such assessments are by necessity, commanders will use them to make decisions on reprioritization and reattack.

Fire support coordination will remain significant. Its complexity, difficulty, and relevance all increase when ground forces are introduced ashore (requiring a need for tactical and operational precision engagement to support them), enemy activity increases, and operations are more joint and multinational.



Ends, Means, Ways

Although the above illustration contains nothing new, it depicts the issues addressed in this article. Ends are provided to operational commanders by higher authority and are circumscribed in place, time, and intensity. That is, they are not unlimited and do not pertain to unconstrained political goals such as unconditional surrender. Instead, they can require removing an enemy force from friendly territory, restoring international borders, quelling an insurgency, protecting access to important resources such as fuel oil and water, or offsetting a coercive threat. Of major interest and the focus of offensive efforts by commanders, strategic and operational targets are on land. It is unlikely in the 2010 time frame that operational objectives will be located at sea. There will be no battlefleets to confront, ballistic missile launching submarines to attack, or at-sea assets to neutralize or destroy which would have an effect on the operational or strategic level.

Traditionally the purpose of an offensive attack was to delay, disrupt, destroy, or degrade enemy forces or critical tasks and facilities and affect their will to fight. With precision engagement, operational and strategic targets can be attacked with the intention of directly influencing the course and outcome of the conflict.

In sum, while weapons have become brilliant, other considerations weigh heavily upon

the ability of precision engagement to achieve its objectives. An enemy will try to deny the requisite targeting information and keep targets moving. Joint and multinational forces will be constrained by the concern over hitting the correct target, risk of friendly casualties, collateral damage effects, and difficulties with assessing the results of attacks.

Full Dimensional Protection

Finding and successfully attacking the right target represents the greatest operational impediment to achieving strategic and operational objectives. Clearly, then, countertargeting must be a key concern for the commander. This is underscored by the necessity to keep friendly casualties as low as possible.

Attaining the ends for which force is being applied is the overriding issue for commanders. They cannot be insensitive to the survival and effectiveness of their own forces; yet survival is not the goal but merely a contributor to it. Thus, full dimensional protection for the force is important but is neither the highest concern nor the objective of commanders.

Commanders seek to conserve their fighting power. Full dimensional protection is a way to achieve that goal. It may be passive (deception, armor, electronic countermeasures, operations and communications security, and dispersal) or take the form of three dimensional active defenses. Full dimensional protection includes the defense of joint and multinational land, sea, air, space, and special operations forces; bases; and lines of communication from:

- enemy operational maneuvers and concentrated land, sea, and air attack
- natural occurrences—primarily weather
- terrorist attack.

Also included are protection of operational level forces, systems, and civil infrastructure of friendly nations and groups in military operations other than war.

As noted above, each operational concept is linked to the other three. In the case of full dimensional protection, both dominant maneuver and precision engagement will perform major roles in a commander's plan to protect his forces. Operational command and control, focused logistics, and ISR will likewise contribute synergistically to protection.

Full dimensional protection in 2010 will benefit from decades of recognition that protection of one's force begins at enemy launch points. Attacking enemy offensive systems by destroying missile launchers, aircraft on the



U.S. Navy (Jeffery S. Viano)

Patrol craft off
San Diego.

ground, ships in port, and tanks and artillery before they come into range of friendly forces will remain the preferred action. The rule will be the farther from the defended force, the more desirable the defensive action.

Another straightforward principle of full dimensional protection is that layered defenses are more effective than nonlayered ones. Two layers, each 60 percent effective, will have a combined effectiveness of 84 percent. A third 60 percent layer increases overall effectiveness to 94 percent. (If layers are each 80 percent effective, the second layer provides 96 percent overall and the third 99 percent.) Given a choice operational commanders will erect layered defenses—whether against aircraft attack, tanks, ballistic missiles, or submarines.

For the same reason, while moving targets are difficult to attack, they are easier to defend. Commanders will probably be obliged to provide operational protection for fixed points—bases, airfields, supply depots, ports—but where possible keep their forces mobile for increased security.

Operational defense from three dimensional attack for forces at sea will fall primarily, but not exclusively, on naval forces. Mine and antisubmarine warfare are primarily naval activities. Operational air and missile defense, on the other hand, will likely be joint or multinational.

In the time frame under consideration few of the potential threat countries for expeditionary operations will have robust over-the-horizon surveillance and reconnaissance capabilities. Many, however, will be capable of indiscriminate attacks like the 1987 Iraqi assault on *USS Stark*. Fewer still will be capable of operating naval or air forces at appreciable distances from home bases, which means that lines of communication in open seas should be relatively secure, depending on the enemy. As naval forces approach land, however, the operational environment becomes more dangerous and operational protection more challenging. This vulnerability can never be fully negated but has been ameliorated, and can be in the future, by a combination of increasing the stand-off ranges of naval sensors and weapons, greater stealth, dominant maneuver, operational deception, and better tactical warning and attack assessment. The commanders of joint and multinational forces must not only secure the at-sea lines of communications, but the land and air lines.

Although chemical and biological warfare (CBW) threats will be of concern to land forces, they are less vexing for naval forces because enemy targeting problems are dominant. If an enemy can target a ship, why should it not put a hitting weapon on it rather than a chemical warhead, which is less reliable, more costly, and more

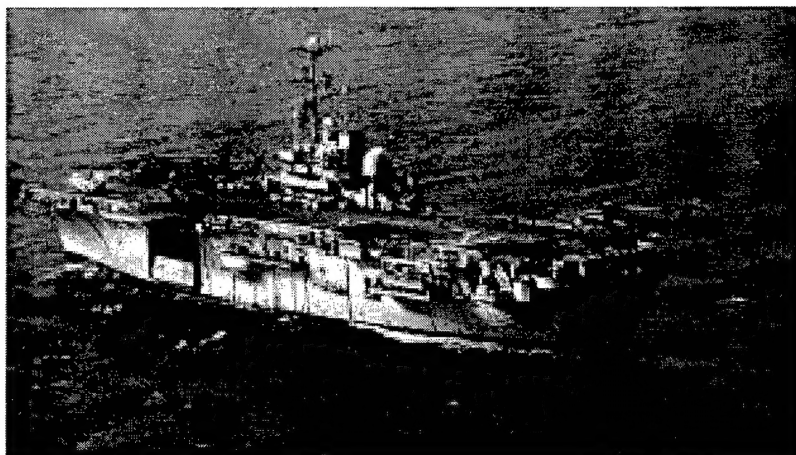
difficult to deliver? The logic against CBW use on ships, especially at long ranges, is strong.

Nevertheless, commanders will be responsible to protect their force from weapons of mass destruction. Deterrence against their use has been

**information superiority is
a byproduct of high quality
C² underwritten by ISR**

weakened by the lack of a counterthreat in kind and by their increased value as an asymmetrical response to systems deployed by the United States and its allies. Indeed, chemicals and biologicals have

become "the poor man's atomic bomb" and many countries either have these capabilities or will have them by 2010.



Mine countermeasure
support ship
USS Incheon.

U.S. Navy

Focused Logistics

All things considered, it is the ability to provide focused logistic support to project forces that makes those forces and their deterrent threat so effective. The United States is by far the world leader in intertheater lift, both sea and air, and it has the only force of prepositioning ships placed strategically around the globe. Strategic sealift, land prepositioning, and host nation support round out the significant, unparalleled U.S. infrastructure designed to lend operational support.

Naval forces are the most self-sustaining of all military formations. They invariably arrive at the scene with filled fuel bunkers, magazines, and storerooms. Demands for focused logistic support stemming from high-intensity combat operations are great, however, and failing to attend to them will place any campaign or major operation at risk.

Each operational theater will be different in terms of in-place operational support available to commanders and the difficulty faced by lift forces. Operational commanders are responsible for organizing required support from wherever it is based.

They must identify operational needs as soon as possible and establish priorities for employing resources. They must prepare to sustain both the tempo and continuity of all engaged forces throughout a campaign or major operation.

Support is complicated by the number and type of forces assigned. Joint and multinational forces will massively increase arms, ammunition, and equipment replenishment requirements over the comparatively simple needs of a naval expeditionary force. Responsibilities include not only synchronizing the flow of fuel, food, and ammunition, but also maintenance of equipment in the theater, coordination of manning to provide uninterrupted flows of trained units and replacements, management of casualties, and support of personnel and health services. The latter includes both personal welfare and comfort (finance, chaplain, legal services, clothing and individual equipment, laundry, bath, evacuation of wounded and sick blood management, and graves registration). The range of support is broad, dynamic, and demanding, and it is a major part of the planning process.

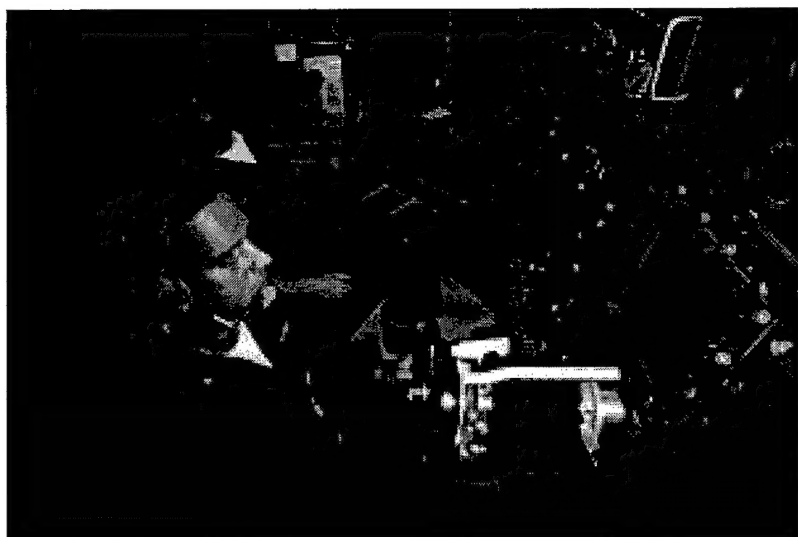
ISR and C²

In the words of *JV 2010*: "We must have information superiority: the capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same." The success of dominant maneuver, precision engagement, full dimensional protection, and focused logistics all pivots on information superiority, which is a byproduct of high quality C² underwritten by ISR.

Joint and multinational operations are inherently more complex, and thus much more taxing on command and control arrangements, than single service operations. It is anticipated that most combat on the operational level in the future will be joint, multinational, or both. The concomitant increase in complexity and difficulty of command and control must be planned well in advance.

The first level of activity in gaining information superiority involves collecting information on the theater of operations, tasks to be performed, and friendly and enemy orders of battle. These and geophysical factors vary from theater to theater. Insofar as U.S. and multinational forces have been previously or routinely deployed in a given theater, the task of setting the stage will be eased. Depending on objectives, commanders will determine their critical information requirements, thus prioritizing the information flow.

Operational intelligence includes deciding when, where, and in what strength an enemy will stage and conduct military activities. As such, it underwrites each of the four operational concepts.



USS Seawolf (John E. Gray)

Manning helm of
USS Seawolf.

Assumptions and assessments made about operational intelligence will have a key influence on the conduct of campaigns and major operations.

Important tasks will include preparing an operational collection plan. In 2010 this will be aided by new systems in the atmosphere and space. Much intelligence collection, reconnaissance, and surveillance will be directed at finding, identifying, and tracking targets. Enemies, however, will become more sophisticated even with more supportive technologies.

This task, which includes determining prospective enemy courses of action and intentions, is vital. Enemies will seek to present friendly forces with *faits accomplis* or at least take advantage of surprise. Thus indications and warning for theater operations will be an essential output of the process. U.S. collection and analysis efforts must also anticipate the various levels of surprise and plan to negate their effects. Friendly forces probably cannot prevent surprise but should be capable of withstanding and offsetting its effects.

Intelligence collection, processing, exploitation, and dissemination is a continuing demand throughout a campaign or operation. It must not tire of aggressively discerning enemy intentions or providing positive identification and location of all theater forces.

Commanding subordinate forces requires delineating responsibilities among commanders. The overall commander issues orders and rules of engagement. Because maneuver, engagement, and protection benefit from attacking an enemy early, special rules of engagement or relaxations may be needed. Coordination and synchronization are also high priorities.

Among the command and control tasks is organization of a joint force headquarters. There must be procedures to develop a joint C² structure,

establish liaison structures, integrate joint force staff augmentees, deploy headquarters advance elements, and institute command transition criteria.

Information warfare will become more important because, among other things, it carries the potential for significant destruction with little violence. Commanders will integrate and coordinate the use of operations security, military deception, psychological operations, electronic warfare, and physical destruction for command and control warfare, probably in ways not yet fully considered. Information and C² warfare have offensive and defensive dimensions. Future commanders will be more attuned to their requirements and will monitor and adjust operations as they occur.

Finally, commanders will need to provide public affairs within their theater of operations. Media relations will become more complex and difficult because the ability of the media to collect information will undoubtedly increase.

The analysis of naval forces on the operational level in 2010 begins with a consideration of the tasks to be accomplished. Such tasks and their locations are confined in size and difficulty and are finite in number. Since operational objectives will likely be ashore, the focus will be on land.

Maneuver by naval forces takes place at sea where they enjoy broad freedom of movement. Ships can be vectored to a given location without committing to action. Operating on the high seas, they incur no political costs in repositioning for advantage. This will not change in 2010. Relative to an action taken by an enemy, at-sea mobility translates into dominant maneuver.

From areas secured by dominant maneuver and by full dimensional protection, naval forces can engage with precision. Targets can be attacked by aircraft, missiles, and guns and by landing Marine forces. Such areas can be secured until joint air and land forces arrive to exploit critical vulnerabilities. Operations are sustained as long as required by focused logistics.

The differences between today and 2010 can be found in the relative ability of friendly and enemy forces to locate, identify, and attack targets. High quality ISR in conjunction with updated C² procedures and organizations will give an advantage to friendly forces. Executing the concepts found in *JV 2010* will bring success so long as the risks remain low. Refined doctrine, improved organizational relationships, and focused and purposeful training must be combined with new weapon systems to ensure future success. **JFQ**

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